#### (19) World Intellectual Property Organization International Bureau





# (43) International Publication Date 28 March 2002 (28.03.2002)

### **PCT**

# (10) International Publication Number WO 02/24275 A3

(51) International Patent Classification7:

101

(21) International Application Number: PCT/US01/29106

(22) International Filing Date:

14 September 2001 (14.09.2001)

(25) Filing Language:

English

A61N 1/39

(26) Publication Language:

English

(30) Priority Data:

09/663,606 18 Septem

18 September 2000 (18.09.2000) US

(71) Applicant (for all designated States except US): CAMERON HEALTH, INC. [US/US]: 924-A Calle Negocio, San Clemente, CA 92673 (US).

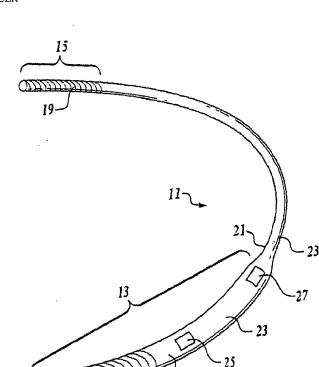
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BARDY, Gust, H.

[US/US]: 2518 Constance Drive West, Scattle, WA 98199 (US). CAPPATO, Riccardo [IT/IT]: Via Fluvio Testi. 22, 1-44100 Ferrara (IT).

- (74) Agents: PETTIT, Jonathan, L. et al.: Brobeck. Phleger & Harrison, 12390 El Camino Real. San Diego, CA 92130 (US).
- (81) Designated States (national): AE. AG. AL. AM. AT. AU. AZ, BA, BB, BG, BR, BY, BZ, CA. CH. CN. CO, CR. CU. CZ. DE, DK. DM, DZ. EC. EE. ES. FI. GB, GD. GE. GH. GM. HR. HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC. LK. LR. LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW). Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM). European

[Continued on next page]

(54) Title: UNITARY SUBCUTANEOUS ONLY IMPLANTABLE CARDIOVERTER-DEBRIBILLATOR AND OPTIONAL PACER



(57) Abstract: A unitary subcutaneous implantable cardioverter-defibrillator disclosed which has a long thin housing in the shape of a patient's rib. The housing contains a source of electrical energy, a capacitor, and operational circuitry that senses the presence of potentially fatal heart rhythms. Provided on the housing are cardioversion/defibrillation electrodes located to deliver electrical cardioversion-defibrillation energy when the operational circuitry senses a potentially fatal heart rhythm. The unitary subcutaneous implantable cardioverter-defibrillator does not have a transvenous, intracardiac, epicardial, or subcutaneous electrode.

WO 02/24275 A3



patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

## (88) Date of publication of the international search report: 30 May 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

### IN :RNATIONAL SEARCH REPORT

Inter. ..onal Application No PCT/US 01/29106

		PCT/US 01/29106		
L CLASSIF	ICATION OF SUBJECT MATTER A61N1/39			
irc /	AOINI/ 33			
	A second Detect Classification (IDC) and both national classification as	and IPC		
	International Patent Classification (IPC) or to both national classification a	io iro		
Minimum doo	cumentation searched (classification system followed by classification sym	ibols)		
IPC 7	A61N A61B	•		
	on searched other than minimum documentation to the extent that such do	surrente are included in the fields searched		
Documentati	on searched other than minimum documentation to the extent that such do	iculterits are included in the news searched		
Electronic de	ata base consulted during the international search (name of data base and	( where practical, search terms used)		
EPO-In		, , , , , , , , , , , , , , , , , , ,		
ELO-III	ter na i			
C. DOCUMI	ENTS CONSIDERED TO BE RELEVANT			
Category °	Citation of document, with indication, where appropriate, of the relevant	passages Relevant to claim No.		
Α	US 5 385 574 A (HAUSER ROBERT G ET	AL) 1,35,69, 85,96,		
	31 January 1995 (1995-01-31)	102,103,		
		105-108		
	the whole document	•		
Α	US 4 157 720 A (GREATBATCH WILSON)	1,35,69,		
	12 June 1979 (1979-06-12)	85,96, 102,103,		
		105-108		
	the whole document			
-A	EP 0 627 237 A (TRABUCCO HECTOR OSVA	ALDO 1,35,69,		
	;GAVRIELIDES JORDAN (DE))	85,96,		
	7 December 1994 (1994-12-07)	102,103, 105-108		
	the whole document			
	-/-	_		
	′			
X Fu	ther documents are listed in the continuation of box C.	Patent family members are listed in annex.		
° Special o	alegories of cited documents :	later document published after the international filing date		
'A' docum	nent defining the general state of the art which is not idered to be of particular relevance	or priority date and not in conflict with the application but cited to understand the principle or theory underlying the		
'E' earlie	· · · · · · · · · · · · · · · · · · ·	invention document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to		
'L' docum	nent which may throw doubts on priority claim(s) or	involve an inventive step when the document is taken alone		
citati	on or other special reason (as specified) ment referring to an oral disclosure, use, exhibition or	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such docu-		
othe	nent realiting to all that discussive, use, exhibition of riverses nent published prior to the international filling date but	ments, such combination being obvious to a person skilled in the art.		
later	than the priority date claimed	document member of the same patent family		
Date of th	e actual completion of the international search	Date of mailing of the international search report		
	14 March 2002	21/03/2002		
Name and	d mailing address of the ISA	Authorized officer		
	European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tsl. (+31-70) 340-2040, Tx. 31 651 epo nl.	Connigno A		
	Fax: (+31-70) 340-3016	Ferrigno, A		

### IN RNATIONAL SEARCH REPORT

Intel. .ional Application No PCT/US 01/29106

	70 OC 071 CVANT	10703 01723100		
	ation) DOCUMENTS CONSIDERED TO BE RELEVANT  Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
Category °	Citation of document, with indication, where appropriate, of the received passages			
A	US 5 331 966 A (BENNETT TOM D ET AL) 26 July 1994 (1994-07-26)	1,35,69, 85,96, 102,103, 105-108		
	the whole document			
Y	WO 99 53991 A (ALZA CORP) 28 October 1999 (1999-10-28) the whole document	113		
Υ	US 6 093 173 A (BALCETA JOBERT P ET AL) 25 July 2000 (2000-07-25) the whole document	113		
A	WO 97 29802 A (LOEB GERALD E ;RICHMOND FRANCES J R (CA); ADVANCED BIONICS CORP (U) 21 August 1997 (1997-08-21) the whole document	113		

### FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-31,35-108

unitary subcutaneous implantable cardioverter-defibrillator

2. Claim : 113

apparatus for implanting an implantable cardioverter-defibrillator

### IN PRNATIONAL SEARCH REPORT

information on patent family members

Inte. .ional Application No PCT/US 01/29106

Patent document		Publication		Patent family	Publication
ited in search report		date		member(s)	date
JS 5385574	Α	31-01-1995	US	5133353 A	28-07-1992
			ΑT	168024 T	15-07-1998
			AU	641224 B2	16-09-1993
			AU	7354591 A	07-11-1991
			CA ·	2040800 A1	26-10-1991
			DE	69129716 D1	13-08-1998
			DE	69129716 T2	24-12-1998
			DK	453761 T3	19-04-1999
				0453761 A1	30-10-1991
			EP		01-11-1998
			ES	2120411 T3	
			JP	5064666 A	19-03-1993
			US	6157860 A	05-12-2000
			US	5713926 A	03-02-1998
			US	6280462 B1	28-08-2001
			US	5916238 A	29-06-1999
 US 4157720		12-06-1979	AU	521296 B2	25-03-1982
30 910//20	•	10 00 10,3	AU	3986278 A	20-03-1980
			CA	1120548 A1	23-03-1982
			DE	2840307 A1	29-03-1979
			FR	2403075 A1	13-04-1979
					28-03-1979
			GB	2004188 A ,B	31-03-1981
			IL	55526 A	
			JP	54060791 A	16-05-1979
			MX	146747 A	05-08-1982
			NL	7809422 A	20-03-1979
			SE	7809645 A	17-03-1979
EP 0627237	- <b></b>	07-12-1994	US	5243977 A	14-09-1993
			EP	0627237 A1	07-12-1994
US 5331966	Α	26-07-1994	AU	654552 B2	10-11-1994
00 0001500			AU	1750692 A	02-11-1992
			CA	2106378 A1	06-10-1992
			DE	69210395 D1	05-06-1996
			DE	69210395 T2	09-01-1997
			EP	0578748 A1	19-01-1994
			JP	2655204 B2	17-09-1997
					30-06-1994
			JP	6505662 T	
			WO	9217240 A1	15-10-1992
WO 9953991	Α	28-10-1999	AU	3748899 A	08-11-1999
			TW	442273 B	23-06-2001
			WO	9953991 A1	28-10-1999
US 6093173	Α	25-07-2000	NONE		
WO 9729802	Α	21-08-1997	WO	9729802 A2	21-08-1997
HO 7/25002	rı	21 00 1007	ÜS	6185455 B1	06-02-2001
			US	6214032 B1	10-04-2001